Curriculum Map
Subject: Maths
Year 11 Higher

2		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1 Foundation	Summer 2 Foundation
Knowledge /Skills		**2D and 3D shapes** Plans and elevations, isometric drawings	**Algebraic Fractions** simplifying fractions, multiplying fractions	**Sine Rule and Cosine Rule,** area of non right angles triangle	**Gradients and rates of change,** finding the gradient of a curve	Exams	Exams
		Transformations Rotation, reflection, translation enlargement negative and positive scale factors	**Further Equations and Graphs,** estimating gradients of non linear graphs, areas under non linear graphs, sketch and solve non linear graphs	**Circle Theorems** circle theorems and proofs	**Pre Calculus and area under a curve** estimate area under a distance time graph, financial contexts		
		Loci and Construction constructing loci, triangles, bisectors, perpendicular bisectors	**Sketching graphs** Trig functions, exponential functions	**Numerical Methods** Approximations and iterations	**Revision**		
		Direct and Inverse proportion interpret direct and inverse equations and graphs	**Transforming functions** identify sketch translations and reflections	**Equation of a circle** identify centre, find the equation of the tangent	**Revision**		
		Growth and Decay compound interest calculations, growth and decay	**Vectors** Column vectors , vector arithmetic		**Revision**		
		Be able to draw from different perspectives, use isometric paper, be able to use scale factors, negative	Fraction addition, subtraction multiplication and simplification. Estimate and understand	Formulae for sine and cosine rules, substitution, Angles in a triangle and angles facts for circle	Gradients, change in y over change in x. Area of trapezium		

Skills	and fractional SF. Understand line of symmetry. Use compass and pencil to draw accurate bisectors and constructions. Understand proportion notation. Use interest rates to apply to financial gain and loss	key features of non linear graphs. Knowledge of trignometric values and cycles, key features and patterns of trignometric graphs. f(x) graph transformations. Vector notation.	theorem,iteration formula and use of iteration in real life. Formula for equation of a circle, perpendicular lines and complete the square.			
Key Questions	Why must a plan be drawn in 2d format? Where are plans and elevations used in real life? Explain the effect of a negative scale factor? Where is loci used in real life? Explain how we can use the compound interest formula and decimal multipliers to calculate growth and decay	Can you always cancel like term from a numerator and a denominator?. Which is most simplified, the expanded or factorised form? why does the sin graph not go beyond a y value of 1? Vectors, do different paths change the notation?	What is the ambiguous case? What basic angle facts are used to prove circle theorems? Does iteration give an accurate solution for the roots of a quadratic? What would happen to the equation of a circle if the centre is not 0,0?	Why is the area under the curve only an estimation?		

Assessment	Students sit an end of term test at the end of each term, these are marked by the teacher and a full ReACT to the test is completed in lesson, teachers will use a visualiser to model the answers and identify marks and common misconceptions. Continued low stake questioning in class. Peer mentoring. AFL whiteboards and encouragement **AO1: Use and apply standard techniques** Students should be able to: -accurately recall facts, terminology and definitions. -use and interpret notation correctly. -accurately carry out routine procedures or set tasks requiring multi-step solutions. **AO2: Reason, interpret and communicate mathematically** Students should be able to: -make deductions, inferences and draw conclusions from mathematical information. -construct chains of reasoning to achieve a given result interpret and communicate information accurately. -present arguments and proofs. -assess the validity of an argument and critically evaluate a given way of presenting information. **AO3: Solve problems within mathematics and in other contexts** Students should be able to: -translate problems in mathematical or non-mathematical contexts into a process or a series of mathematical processes. -make and use connections between different parts of mathematics. -interpret results in the context of the given problem. -evaluate methods used and results obtained. -evaluate solutions to identify how they may have been affected by assumptions made.
Literacy/ numeracy/ SMSC/ Character	**Literacy:Key word as above, additional knowledge organisers provided to students at the beginning of a new topic , collins dictionary definitions shared https://www.collinsdictionary.com/word-lists/mathematics-mathematical-terms. Knowledge organisers will be stuck into books at the beginning of every new topic, to promote literacy and key vocabulary and skills.** **Freya Model, defining mats:(definition, facts, examples and non examples, including misconceptions). VCOP support models to aid students in using connectives and other language devices to explain a mathematical model or compare data.https://www.missbsresources.com/maths-resources/literacy-within-mathematics** . **Numeracy:Key skills are outlined** . **Character/SMSC/:https://www.bbc.co.uk/bitesize/tags/zrsg6v4/jobs-that-use-maths/1 links to jobs that relate to maths are relayed regularly in lessons, opportunities for cross curricular links outlined in scheme of work.** . **Oracy: encourage teacher-led discussion with equal emphasis on speaking and listening. Group work/paired work. Teacher models correct mathematical processes. Opportunities for logical reasoning and dialogue e.g via Inquiry Maths and reasoning/proof tasks. No hands up questioning approached used**

Enrichment opportunities and futures	Intermediate maths challenge Revision sessions after school, Holiday revision sessions STEM club Statistics project -Real life application to collate and analyse data Maths buddies- opportunities to work with different ages groups and ability Trips, outside speakers and futures links within curriculum.